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MINERALS PROGRAM
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RECEIVED
JUN 16 1989
DIVISION OF
OIL, GAS & MINING

June 15, 1989

Ken A. Kluksdahl
Tenneco Minerals
P.O. Box 2650
955 North 1300 West #4
St. George, Utah 84770

Re: Tenneco Minerals
Gold Strike, Phase 2
Construction Permit

Dear Mr. Kluksdahl:

We have reviewed the revised plans and specifications for the 1st and 2nd extension of the heap leach pad at the Gold Strike heap leach facility.

The project basically appears to comply with current design requirements and practices for heap leach facilities. A **construction permit is hereby issued** as constituted by this letter, subject to the following conditions:

a. A written agreement shall be issued to the Bureau concerning leaching and disposition of any sulfide ore or waste rock from the hamburg pit. This condition assumes that Tenneco Minerals will submit information concerning this situation with sufficient time for review and resolution of issues before actual removal will commence.

b. The Bureau shall be notified at least two (2) days after completion of each component listed below and before construction of the next sequenced component, so proper inspection can be arranged:
   1. Construction of leak detection system base.
   2. Construction of the leak detection media.
   3. Construction of each lift of the secondary clay liner.
   4. Field seaming of the flexible membrane liner.

c. The Bureau shall be notified in a timely manner so an inspection of installed HDPE liner surface can be conducted prior to covering the surface with any other material.

d. The Bureau shall be notified in writing at least ten (10) days prior to completion of leaching operations and prior to commencing closure procedures.

e. Leaching operations must not begin until a final inspection is conducted and a written authorization to use is issued by the Bureau.

f. This construction permit allows the use of the Heap Leach pads described herein until October 1, 1994. Neutralization procedures shall commence on or before that date.

g. The construction of the facilities described in this construction permit shall be under substantial and continuous construction except when construction and/or mining is discontinued due to weather. This is allowed as a result of site constraints which require cycles of mining and construction activity.

h. Any liquid detected in any leak detection sump shall be reported to the Bureau by phone within 24 hours and in writing within 5 days.

i. The neutralization criteria shall be as adopted by the Utah Water Pollution Control Committee at the time of decommissioning, or as approved in writing by the Bureau at the time of decommissioning, **but in no case shall the neutralization criteria for this heap leach project result in degradation of the surface or ground water quality including beneficial uses thereof in the vicinity.**

The attainment of agreed upon neutralization criteria must be verified in three (3) tests reasonably spaced during a twenty-four (24) hour period.

The requirements for neutralization verification by analysis of the spent ore will not be required on the condition that the spent ore piles will be left undisturbed and fenced for at least six (6) years once neutralized.

j. Piezometers or other acceptable devices to monitor the head on the primary (geomembrane) liner must be installed. These devices must be monitored on a daily basis through out the life of the pad. Plans for these devices must be submitted for review and approval prior to construction.

k. All changes to these approved plans and specifications must be reviewed and approved by the Bureau.

l. All liner anchor trenches will be 12 inches or more deep and must be filled with acceptable material properly packed or compacted.

m. The project shall be inspected continuously while under construction by a qualified and independent construction inspector.

n. Based on Tenneco Mineral's 27 September 1988 letter no more than 5.7 acres of heap leach pad surface area can be leached at any one time.

o. All interfaces between existing and new HDPE liner material must be inspected and tested after completion.

p. The process solution collection system (over liner) shall consist of 36 inches of specification material or 18 inches of specification material with 18 inches of 4-inch minus ore on top.

q. The quality assurance tests and frequency of testing for the leak detection system base will be the same as for the secondary clay liner.

r. The leak detection system shall be divided by clay barriers and each section shall have individual leak detection pipes.

s. The heap leach pad shall be surrounded by perimeter berms and drainage ditches to direct surface runoff around the project and into down gradient drainages.

t. It is understood that the maximum particle size of the process solution collection system (overliner) will be 3/8 inch. An exception may be granted to this condition if certification, documentation etc. is submitted to the Bureau for review which is found acceptable to justify a larger particle size.

u. It is understood per conversations with yourself that all field seaming destructive samples will be tested by an independent testing laboratory.

The heap leach pad covered by this construction permit shall be approximately 915 feet by 425 feet (8.9 acres). The ore will be heaped upon this pad to a maximum height of 100 feet and with a minimum toe set back from the inside edge of the perimeter berm of 10 feet.

The heap leach pad liner system shall be capable of retaining its integrity under the ore loads imposed and shall consist of:

Process solution collection system, which will limit process fluid head to 12 inches.
60 mil HDPE primary liner
12-inch minimum of 2.0×10^{-7} centimeters per second secondary clay liner.
6-inch minimum of 1.0×10^{-2} centimeters per second leak detection media.
6-inch minimum of 1.0×10^{-6} centimeters per second base.

It is further noted that the details of the liner system is not shown on drawing 2 of 4 and 3 of 4 of the approved plans.

We are advising you that any increase in pH, lead, cadmium or cyanide in ground water or surface water above background level due to this project may cause the project to be listed on the national priority list of hazardous substance sites by EPA pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

All wastes not exempt under the mining exemption will need to be managed in accordance with Utah's Hazardous waste management regulations (i.e. spent solvents, off specification chemicals, undesirable metals in the leach solutions etc.).

By copy of this letter to the Division of Oil, Gas and Mining we are requesting that their personnel inspect all leak detection sumps at the facility each time an inspection is made.

Please call my staff if there are any questions.

Sincerely,

Utah Water Pollution Control Committee

Don A. Ostler, P.E.
Executive Secretary

CGD/ag

W/enclosures

cc: Wayne Thomas, Southwest District Health Department
Mr. Bill Dawson, Southwest District Health Department
Mr. Lowell Braxton, Division of Oil, Gas and Mining

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